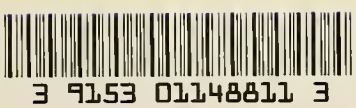

The Connecticut Agricultural Experiment Station, New Haven

Specialty Melon Trials 1994-1995

BY DAVID E. HILL

Bulletin 933
May 1996

SUMMARY

In 1994-1995, a total of 15 cultivars of specialty melons (canary, charentais, Christmas, crenshaw, galia, and honeydew) and two cultivars of watermelon (one seedless) were grown at Windsor on a sandy terrace soil and at Mt. Carmel on a loamy upland soil. Yearly average yield of specialty melons ranged from 21.8-16.9 T/A at Windsor compared to 13.8-10.6 T/A at Mt. Carmel. Yearly average yield of watermelons ranged from 25.6-24.6 T/A at Windsor compared to 14.7-12.8 T/A at Mt. Carmel. In 1994, greater yield of specialty melons at Windsor compared to Mt. Carmel was due to greater average number of fruit harvested (11,485/A vs. 6,495/A) and greater average weight of fruit (3.9 lb vs. 3.6 lb). In 1994, greater yield of watermelons at Windsor, compared to Mt. Carmel, was due to greater average number of fruit harvested (9,130/A vs. 8,675/A) and greater average weight of fruit (9.6 lb vs. 7.8 lb). Droughty conditions at Mt. Carmel reduced fruit set and size of fruit. In 1995, persistent drought in June and July at both sites reduced average yield of specialty melons 56% at Windsor and 4% at Mt. Carmel, compared to 1994. Among all specialty melons, yield of Tenerife (canary) was greatest in both years (avg 30.6 T/A) because of heavy fruit. Greatest yield of each melon type was Passport (honeydew), Galia (galia), Acor (charentais), and Early Crenshaw (crenshaw). All were of excellent quality.

Among the watermelon cultivars, Sugar Baby had the greatest yield at both sites because of a large number of fruit harvested. Although the yield of Ssupersweet 2532 was smaller than Sugar Baby, the average weight of fruit was nearly two-fold greater.

Management strategies are presented to provide maximum yield throughout the growing season by cultivar selection and management.

Specialty Melon Trials 1994-1995

By David E. Hill

Specialty melons may be defined as members of the genus *Cucumis* whose fruits may be large, have unique flavors, and command a high price in the marketplace. In commercial trade, specialty melons are often referred to as "mixed melons" and include canary, crenshaw, casaba, Christmas, and Persian melons. I have taken the liberty to include mideastern galias and French charentais because they have tickled the palates of European consumers for decades and whose availability in the United States is limited to occasional imports. I have also included honeydews and seedless watermelons because they command higher prices compared to cantaloupe and seeded watermelons.

The origin of most melons is thought to be tropical and subtropical Africa and Iran east to China (Yamaguchi 1983). They were introduced into the United States by settlers in the 1600's (Splittstoesser 1979). Melons are dominantly grown in the Southeast where temperatures are warm. New cultivars have been developed with shorter days to maturity that can be adapted to northern climates. Northern growers can also speed maturity by using transplants grown in a greenhouse. Black and IRT plastic mulch with spun-bonded polyester row covers has been shown to substantially increase total yield and earliness on melons grown in the Northeast (Wells and Loy 1985).

Current outlook. Most areas devoted to melons are for cantaloupes. Although precise acreage in Connecticut is unknown, Stephens et al. (1988) reported 57 acres grown in 1982, largely for roadside sales. An enterprise budget developed by Bravo-Ureta et al. (1985), presented a pessimistic view of cantaloupe production. Although there was a demand for melons, the crop would be grown at a loss based on yield projections. The enterprise budget included costs for plastic mulch, but not row covers. Based on current trials, it appears that projected yields in 1985 were most conservative. Use of row covers substantially increased total yield. Further, the specialty melons are larger and command a greater price in the marketplace.

In this bulletin, I shall report yield and quality of 15 cultivars of specialty melons and two cultivars of watermelons grown at Windsor and Mt. Carmel in 1994-1995. I shall also discuss strategies to maximize yield throughout the growing season through cultivar selection and management.

METHODS AND MATERIALS

Soils. Melon trials were conducted at the Valley Laboratory, Windsor, on a Merrimac sandy loam, a well drained, sandy terrace soil with somewhat limited moisture holding capacity and at Lockwood Farm, Mt. Carmel, on Cheshire fine sandy loam, a well drained loamy upland soil with moderate moisture holding capacity.

Cultivars. Seeds were obtained from several domestic suppliers. A total of 17 cultivars were grown during the 2-year trial. The various kinds of specialty melons and their mature characteristics are listed in Table 1. Marygold is a casaba x canary cross; Honeyloupe, a cantaloupe x honeydew cross; and Passport, a galia x honeydew cross. Seedless watermelon Ssupersweet 2532 must be grown with a seeded variety (Sugar Baby) to provide pollen for fertilization.

Culture. Seeds were sown April 26-28 in 3x3x3-inch Jiffystrips (6-pot pack) filled with Promix and placed in a greenhouse maintained at 75-90F. After germination, the plants were thinned to one per pot. Seedlings were moved to a cold frame May 20-31. Water soluble 20-20-20 fertilizer (1 tbsp/gal) was added to the seedlings 3 days before they were transplanted in the field. On June 1-6, plants of each cultivar were transplanted 2 feet apart in 50-foot rows mulched with 1.25 mil black film (3 ft wide). Row centers were alternatively 5 and 6 feet apart. Paired rows, 5 feet apart, were covered with Reemay spun-bonded polyester (10.5 ft x 50 ft). The Reemay was pinned to the soil with 6-inch wide staples that penetrated 5 inches into the soil to prevent loosening in high winds. The Reemay was removed June 28-July 6 to allow bees to pollinate the first female flowers forming along the vines. The plant spacing of 2 ft x 5.5 ft created a density of 3960 plants/A.

Fertilization. The soils were fertilized at a rate of 1000 lb/A 10-10-10 before the black film was applied. After the Reemay was removed, the strips between the black plastic were sidedressed with 240 lb/A calcium nitrate. Total application of nitrogen for the season was 140 lb/A. Soil pH was about 6.5 at each site; lime was not applied.

Table 1. Specialty melons grown at Windsor and Mt. Carmel, 1994-1995, and their characteristics.

Cultivar	Year Tested 1994	1995	Shape	Color	Mature Rind Surface Texture	Flesh Color
HONEYDEW						
Honey Brew		x	Oval	Pale green	Smooth	Pale green
Honeyloupe	x		Oval	Cream	Smooth	Pale orange
Passport		x	Round	Greenish gold	Finely netted	Pale green
CANARY						
Gold King		x	Oval	Yellow	Smooth	Pale green to cream
Marygold		x	Oval	Yellow	Wrinkled	Creamy white
Tenerife	x	x	Oval	Yellow	Smooth	Pale green to cream
GALIA						
Crete	x		Round	Green	Netted	Pale green
Galia	x	x	Round	Greenish gold	Netted	Pale green
M1022		x	Round	Greenish gold	Netted	Pale green
CHARENTAIS						
Acor	x	x	Round	Gray green to buff	Smooth,sutured	Orange
Alienor	x		Round	Gray green to buff	Smooth, sutured	Orange
Charmel	x		Round	Gray green to buff	Smooth, sutured	Orange
Savor		x	Round	Gray green to buff	Smooth, sutured	Orange
CRENSHAW						
Early Crenshaw		x	Oval	Yellow	Smooth	Pale yellow to salmon
CHRISTMAS						
St. Nick	x		Elliptical	Dark green	Striated	Creamy white
WATERMELON						
Ssupersweet 2532	x	x	Round	Dark and light green striped	Smooth	Bright red
Sugar Baby	x	x	Round	Greenish black	Smooth	Bright red

Disease control. Powdery mildew, anthracnose, and phytophthora were controlled with alternate biweekly applications of Ridomil-Bravo 81W (3 lb/A) + Karathane WD (0.5 lb/A) and Bravo 500 (3 pt/A) + Benlate 50 DF (0.5 lb/A) from early-July to mid-August following removal of the Reemay.

Insect control. Vine borers and cucumber beetles were controlled with three applications of Asana XL (9.6 oz/A). The first application followed immediately after transplanting but before the Reemay covered the crop. Another application was made after the Reemay was removed in early-July and again in mid-July.

Weed control. Weeds were controlled with Dacthal 75W (10 lb/A) applied to the soil strips between the mulched rows after transplanting but before placement of the Reemay cover. Occasional tall weeds that arose above the vines did not interfere with vine production or harvest of fruit.

Irrigation. The crops at both sites were irrigated with 0.5-1.0 inches of water after the Reemay was removed but before the vines completely carpeted the aisles between the paired rows.

Harvest of fruit. Specialty melons were harvested at both sites between August 7 and October 2. Watermelons were harvested at both sites between August 28 and October 4. All fruit was harvested at the full-ripe stage. At full ripeness, the fruit are table ready and limited to local use. Mature fruit that must be transported long distances should be harvested before full ripeness.

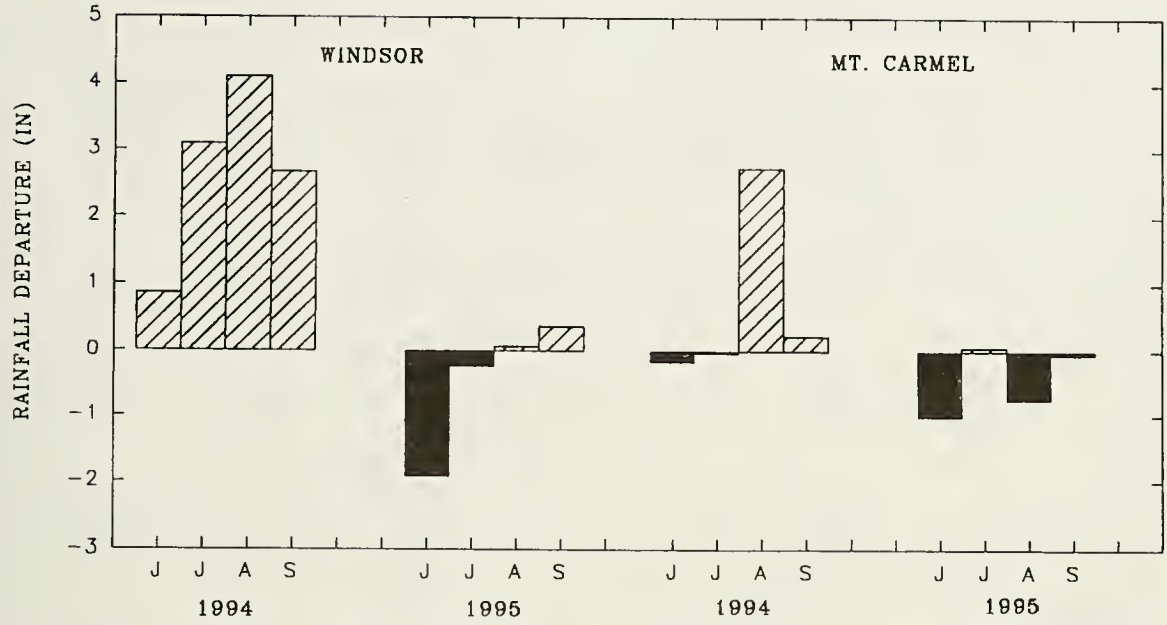

Figure 1. Departure from normal rainfall (0) during the 1994-1995 growing seasons at Windsor and Mt. Carmel.

Rainfall. Rainfall distribution throughout the growing season, June through September, is shown in Figure 1. Each bar represents the departure from mean monthly rainfall for Hartford and Mt. Carmel reported by the National Weather Service.

In 1994, total rainfall from June through September was 23.4 inches at Windsor and 15.6 inches at Mt. Carmel compared to 30-year averages of 12.7 and 12.8 inches respectively at both sites. The above-average rainfall (+10.7 inches) at Windsor was supplied by localized thunderstorms in June and August and provided ample water for the growing crop. At Mt. Carmel, total rainfall for the growing season was slightly above normal (+2.8 inches), but moisture deficits occurred in June and July during the most active period of vine growth and reduced their vigor.

In 1995, total rainfall from June through September was 10.9 inches at Windsor and 11.1 inches at Mt. Carmel compared to 30-year averages of 12.7 and 12.8 inches, respectively, at each site. Most rainfall in July and August was supplied by localized thunderstorms. Rainfall deficits occurred in 3 of 4 months at Mt. Carmel and 2 of 4 months at Windsor. Rainfall deficits at both sites were severe in June during the most active period of vine growth.

YIELD OF FRUIT

1994 Crop. The average yield of eight cultivars of specialty melons and two cultivars of watermelons at Windsor was 21.8 T/A and 25.6 T/A, respectively, compared to 10.6 T/A and 14.7 T/A at Mt. Carmel, a difference of 105% and 74%, respectively (Table 2). Greater yield of all cultivars at Windsor was due to greater average number of fruit (11,485 vs. 6,495) and greater average weight of fruit (3.9 lb vs. 3.6 lb). Greater yield of watermelon cultivars at Windsor was also due to greater average number of fruit (9,130 vs. 8,675) and greater average weight of fruit (9.6 lb vs. 7.8 lb). Lower number and weight of fruit at Mt. Carmel were due to high temperature and moisture deficits in June and July that caused some flowers to abort during early fruit set. Fruit set was normal at Windsor because localized thunderstorms supplied ample rain and cooled air temperatures. At Mt. Carmel, smaller fruit was also due to an infection of powdery mildew in late-August that partially collapsed the foliage despite efforts to control the disease.

At Windsor, yield of Tenerife (canary) exceeded 30 T/A. The fruit of Tenerife was heaviest among all specialty melons, but number of fruit harvested was among the lowest. Yield of Honeyloupe (honeydew x cantaloupe), Galia (galia), Acor (charentais) and Marygold (casaba x canary) exceeded 20 T/A, mostly due to high number of fruit set. Among the charentais, Acor had the heaviest but not the most abundant fruit. Among all specialty melons, the charentais group was more prone to splitting during periods of rapid growth following heavy rains. Despite this limitation, the number of fruit harvested was high because of excellent fruit set.

At Mt. Carmel, yield of Tenerife exceeded 16 T/A, the highest among all specialty melons. Yield of Galia, Honeyloupe, and Acor exceeded 11 T/A because of total fruit harvested.

At both sites, yield of watermelon cultivar Sugar Baby was greater than Ssupersweet 2532 because of the large

Table 2. Yield of specialty melons at Windsor and Mt. Carmel, 1994.

	WINDSOR				MT. CARMEL			
Cultivar	Avg. Wt. lb.	Total Fruit No/A	Total Yield T/A	2/3 ctn* No/A	Avg. Wt. lb.	Total Fruit No/A	Total Yield T/A	2/3 ctn* No/A
HONEYDEW/CANTALOUPE								
Honeyloupe	3.8	15,205	28.9	1,805	3.7	6,810	12.6	790
CANARY								
Marygold	3.0	13,465	20.2	1,265	2.4	5,700	6.8	425
Tenerife	7.4	8,555	31.6	1,975	5.5	6,020	16.6	1,040
GALIA								
Crete	3.9	5,545	10.8	675	3.5	5,070	8.9	555
Galia	3.8	13,780	26.2	1,640	3.3	8,710	14.4	900
CHARENTAIS								
Acor	3.9	11,720	22.8	1,425	3.3	6,655	11.0	690
Alienor	2.8	10,140	14.2	885	2.5	4,120	5.2	325
Charmel	2.9	13,465	19.5	1,200	2.0	8,870	8.9	555
WATERMELON**								
Ssupersweet 2532	11.6	6,180	35.8	895	9.1	5,785	26.3	660
Sugar Baby	7.7	12,040	46.3	1,160	6.6	11,565	38.2	955

*Standard shipping container is the 2/3 carton weighing 30-34 lb, packed 4-10 melons/container

**A standard container for watermelons is an 80-85 lb carton, various counts

number of fruit harvested. Ssupersweet 2532 produced the heaviest fruit at both sites. The difference in yield and fruit weight between Windsor and Mt. Carmel was less for watermelons than other specialty melons, a testament to their better adaptation to hot and dry conditions.

1995 Crop. The average yield of 10 cultivars of specialty melons and two cultivars of watermelon at Windsor was 16.9 T/A and 24.6 T/A respectively, compared to 13.8 T/A and 12.8 T/A at Mt. Carmel, a difference of 22% and 92% (Table 3). Greater yield of specialty melons at Windsor was due to greater average number of fruit harvested (7,380 vs. 6,270). Average weight of fruit was about the same (4.8 lb vs. 4.7 lb) at both sites. Greater yield of watermelon cultivars at Windsor was due to greater average number of fruit harvested (6,335 vs. 3,365). Average weight of fruit was the same at both sites.

Compared to 1994, average yield of specialty melons in 1995 at Windsor was 55% less and Mt. Carmel, 4% less. In 1994 at Windsor, ample rain during the growing season produced high yields. Drought at Windsor in 1995 and at Mt. Carmel in 1994 and 1995 reduced yield.

At Windsor, yield of Tenerife was almost 30 T/A because of heavy fruit and number of fruit. The yield of Early Crenshaw, Passport, and Galia exceeded 20 T/A. The average fruit of Early Crenshaw exceeded 7 lb, while Passport and Galia had the greatest number of fruit compared to all other specialty melons. The yield of Ssupersweet 2532 and Sugar Baby watermelons exceeded 22 T/A. Ssupersweet 2532 had heavier fruit and Sugar Baby more fruit harvested. Although the average weight of St. Nick (Christmas) exceeded 6 lb, the low number harvested resulted in poor yield. Fruit of St. Nick split easily during periods of rapid growth as they neared maturity, and many melons developed soft rot. Among the charentais, Savor also split readily and reduced yields compared to Acor. Among the canarys, Gold King split more readily than Tenerife.

At Mt. Carmel, yield of Honey Brew (honeydew) exceeded 21 T/A. Fruit weight exceeded 5 lb and the number

Table 3. Yield of specialty melons at Windsor and Mt. Carmel, 1995.

	WINDSOR				MT. CARMEL			
Cultivar	Avg. Wt. lb.	Total Fruit No/A	Total Yield T/A	2/3 ctn* No/A	Avg. Wt. lb.	Total Fruit No/A	Total Yield T/A	2/3 ctn* No/A
HONEYDEW								
Honey Brew	5.9	6,180	18.2	1,140	4.8	9,030	21.7	1,355
Passport	3.8	11,880	22.6	1,410	3.8	8,710	16.5	1,030
CANARY								
Gold King	6.3	3,645	11.3	705	5.3	4,595	12.2	760
Tenerife	6.8	8,710	29.6	1,850	6.2	5.395	16.7	1,045
GALIA								
Galia	3.8	10,930	20.8	1,300	4.1	8,235	16.9	1,055
M1022	3.6	9,820	17.7	1,105	3.3	9.345	15.4	965
CHARENTAIS								
Acor	2.8	8,080	11.3	705	2.7	7,285	9.8	610
Savor	1.9	5,070	4.8	300	2.3	3,800	4.4	275
CRENSHAW								
Early Crenshaw	7.2	6,810	24.5	1,530	8.2	4,435	18.2	1,140
CHRISTMAS								
St. Nick	6.3	2,695	8.5	530	6.0	1,900	5.7	355
WATERMELON**								
Ssupersweet 2532	11.0	4,120	22.7	570	11.6	1,980	11.5	290
Sugar Baby	6.2	8,555	26.5	665	5.9	4,750	14.0	350

*Standard shipping container is the 2/3 carton weighing 30-24 lb, packed 4-10 melons/container

**A standard container for watermelons is an 80-85 lb carton, various counts

of fruit harvested was high compared to other specialty melons. Yield of Early Crenshaw, Galia, Passport and M1022 (honeydew) exceeded 15 T/A. Early Crenshaw and Tenerife had the heaviest fruit among all specialty melons but a low number of fruit harvested. M1022, Galia, and Passport had a relatively high number of fruit harvested.

SIZE OF FRUIT

Size of fruit is an important economic factor in shipping fruit and establishing price. After harvest, melons are graded by size, boxed, and shipped to the wholesaler or retailer. Each kind of melon has its own set of grade sizes that reflects the number of melons that fit into a standard container. Within each melon type, large melons command a premium price compared to smaller, more abundant melons. For example, in daily commodity quotes for honeydew melons in active trading, 2/3 cartons containing 5's and 6's (number of melons per carton) may command as much as $2.00 higher per carton than cartons containing size 8's even though the latter contains more melons per carton.

1994 Crop. The size of various types of specialty melons varies according to their genetic trait, weather conditions, disease, and insect pressure during the growing season. Genetically, the size of canary, crenshaw, and Christmas melons is largest (Table 4), honeydew and galia intermediate, and charentais smallest. The size of seedless watermelons is intermediate and "ice-box" melons small.

At Windsor, the average diameter of all specialty melons was 5.1 inches compared to 4.3 inches at Mt. Carmel, a 19% difference. For watermelons, the average diameter was 7.2 inches at Windsor compared to 6.0 inches at Mt. Carmel, a 20% difference. Size differences were due to persistent moisture deficits at Mt. Carmel during early growth. At Windsor, most fruit of Tenerife varied between 5-8 inches compared to 4-7 inches at Mt. Carmel. The intermediate sized galia group, Honeyloupe, Crete, and Galia, were more uniform in size with 80-95% varying between 4-6 inches at both sites. The charentais group were mostly in the 4-6-inch range at Windsor but in the 3-5-inch range at Mt. Carmel. The galias seemed to be less affected by drought than other specialty melons.

Table 4. Size distribution of specialty melons grown at Windsor and Mt. Carmel, 1994.

	WINDSOR							MT. CARMEL						
Cultivar	3-4" %	4-5" %	5-6" %	6-7" %	7-8" %	8"+ %	Dia in	3-4" %	4-5" %	5-6" %	6-7" %	7-8" %	8"+ %	Dia in
HONEYDEW/CANTALOUPE														
Honeyloupe	-	47	46	7	-	-	5.0	12	67	21	-	-	-	3.7
CANARY														
Marygold	16	58	26	-	-	-	4.5	56	36	8	-	-	-	3.9
Tenerife	-	2	37	41	18	2	6.2	-	34	47	19	-	-	5.2
GALIA														
Crete	-	43	54	3	-	-	5.0	3	56	41	-	-	-	4.8
Galia	-	29	59	12	-	-	5.2	16	75	7	2	-	-	4.3
CHARENTAIS														
Acor	-	39	45	15	1	-	5.2	36	62	2	-	-	-	4.0
Alienor	3	70	27	-	-	-	4.7	23	73	4	-	-	-	4.0
Charmel	5	43	47	5	-	-	4.9	8	17	2	-	-	-	3.6
WATERMELON														
Ssupersweet 2532	-	-	1	6	44	49	7.8	-	-	14	46	32	8	6.1
Sugar Baby	-	-	17	49	33	1	6.6	-	3	34	62	1	-	6.0

Table 5. Size distribution of specialty melons grown at Windsor and Mt. Carmel, 1995

	WINDSOR							MT. CARMEL						
Cultivar	3-4" %	4-5" %	5-6" %	6-7" %	7-8" %	8"+ %	Dia in	3-4" %	4-5" %	5-6" %	6-7" %	7-8" %	8"+ %	Dia in
HONEYDEW														
Honey Brew	-	2	44	44	10	-	6.0	-	19	67	12	2	-	5.4
Passport	-	23	63	14	-	-	5.3	-	24	64	12	-	-	5.3
CANARY														
Tenerife	-	2	40	44	14	-	6.2	-	6	53	41	-	-	5.8
Gold King	-	4	39	35	22	-	6.1	-	10	55	31	4	-	5.6
GALIA														
Galia	-	22	64	14	-	-	5.4	-	25	54	21	-	-	5.4
M1022	2	29	58	11	-	-	5.3	-	41	51	8	-	-	5.0
CHARENTAIS														
Acor	6	72	20	2	-	-	4.6	6	74	20	-	-	-	4.6
Savor	16	78	6	-	-	-	4.4	-	79	21	-	-	-	4.7
CRENSHAW														
Early Crenshaw	-	-	24	58	14	4	6.4	-	-	11	68	21	-	6.5
CHRISTMAS														
St. Nick	-	12	59	12	17	-	5.7	-	8	59	25	8	-	5.6
WATERMELON														
Ssupersweet 2532	-	-	12	10	52	26	7.5	-	-	8	16	24	52	7.9
Sugar Baby	-	2	39	46	13	-	6.1	-	3	34	47	13	3	6.1

At Windsor, the size of seedless watermelon Ssupersweet 2532 was predominantly in the 7-10-inch range compared to the 6-8-inch range at Mt. Carmel. Sugar Baby, the pollinator for the seedless cultivar, was in the 6-8-inch range at Windsor compared to the 5-7-inch range at Mt. Carmel.

1995 Crop. At Windsor, the average size of all specialty melons was 5.5 inches compared to 5.4 inches at Mt. Carmel, a 2% difference (Table 5). For watermelons, the average size was 6.8 inches at Windsor compared to 7.0 at Mt. Carmel, a 3% difference.

Among the canarys, the size of Tenerife at Windsor was dominantly in the 5-8-inch range and in the 5-7-inch range at Mt. Carmel. The fruit of Gold King reached the 7-8-inch size in greater numbers than Tenerife at both sites. Since Gold King does not genetically produce larger fruit than Tenerife, the larger sizes are probably due to fewer fruit set on Gold King's vines (Table 3). Among the honeydews, Honey Brew had more melons in the 5-8-inch range than Passport at both sites. The difference in size distribution among the honeydews is probably genetically related. Passport's characteristics seem more like galias than honeydews. The fruits of Passport, Galia, and M1022 were more uniform with the 5-6-inch size predominating at both sites. The charentais, Acor and Savor predominated the 4-5-inch size at both sites, attesting to their genetic uniformity.

Early Crenshaw produced the greatest number of 6-7-inch fruit among all specialty melons, but it also had the greatest diversity of sizes, especially at Windsor.

Seedless watermelon, Ssupersweet 2532, had twice the number of fruit greater than 8 inches at Mt. Carmel compared to Windsor. There was a wide distribution of sizes at both sites. This was probably due to slower growth of fruit set in August as temperatures and daylength decreased.

MANAGEMENT

Selection of cultivars. Specialty melons have a wide diversity in size, shape, and taste. Although each type has its own unique flavor, all have a high sugar content. A variety of specialty melons can be offered to provide the consumer new experiences in melon tasting. Varieties can be chosen to provide fresh melons from late-July through early October. Although the trials encompassed a wide range of melon types, the cultivars tested are merely a few representatives of each type. Growing varieties with a wide range in maturity permits initial high yield in early-to-mid August and sustained yields until frost withers the vines in early-to-mid October.

Cultivars that provided excellent yield and quality during the trials will now be described.

Passport, developed in New England, had the earliest maturity (Table 6). It supplied abundant fruit from early-August through late-September. The size of the fruit remained constant throughout the growing season. Although Passport is listed in some catalogues with the honeydews, its appearance, flesh color, and taste is consistent with galia types.

Honey Brew, a honeydew, matured 18 days later than Passport. Its harvest duration was late-August through late-September. At Windsor, fruit harvested in late-September were consistently larger than fruit harvested in late-August because of a more favorable moisture supply in early-September.

Tenerife, a canary, provided excellent yield and quality from late-August through early-October. Its maturity was intermediate between Passport and Honey Brew. Late harvested fruit tended to be slightly smaller than earlier harvested fruit. First harvest of Gold King was about 4 days earlier than Tenerife but its harvest waned in mid-September.

Galia had the greatest yield in both trial years among the galias. Abundant fruit were harvested from mid-August through early-October. Fruit size remained constant throughout the harvest period. M1022 provided some fruit earlier than Galia, but most were harvested from mid-August to mid-September. The fruit of M1022 were slightly smaller than Galia, but its quality was the same.

Acor provided the greatest yield of all charentais in both years of trials. In 1994, fruit of Acor were harvested from early-August through September; in 1995 harvest was limited to August. Acor fruit were slightly larger than Alienor, Charmel, or Savor.

Early Crenshaw provided fair yield from mid-August through September. Fruit size diminished in September, probably in response to decreased temperature and daylength.

St. Nick, a Christmas melon, had low yield. Its maturity was longest among all specialty melons, and many fruit were damaged by splitting and soft rot.

Only one seedless watermelon cultivar was tested. The yield of Ssupersweet 2532 was relatively high considering that half the space was occupied by Sugar Baby, used as a pollen source. In practical management, a planting sequence that provides a ratio of 2:1 seedless(A):pollinator(B) is preferred (i.e. ABAABAABA, etc.). If this sequence was used in the trials, yield might have increased 17%.

Plastic mulch and row covers. In New England, Wells and Loy (1985) reported an average ten-fold increase in early yield of muskmelon (first three pickings) and a 20% increase in total yield over a 4-year study using black plastic mulch and spun-bonded polyester row covers (Reemay) compared to black plastic mulch alone. Plastic mulch (1.25 mil) can be applied to smoothed, fertilized soil with a tractor-drawn mulch applicator. Transplants, free of greenhouse insects, are planted through slits made in the plastic. Row covers can be applied with a modified plastic mulch applicator (Wells and Loy, 1985) or by hand and pinned to the soil with 6-inch staples. Row covers were removed after the

Table 6. Maturity of specialty melons grown at Windsor and Mt. Carmel, 1994-1995.

CULTIVAR	Avg Days to Maturity	Characteristics at Maturity
HONEYDEW		
Honey Brew	110	Force slip when blossom end yields to moderate pressure
Honeyloupe	114	Force slip when blossom end yields to moderate pressure
Passport	92	Force slip or cut when rind color half-changes from green to gold
CANARY		
Gold King	102	Cut when blossom end yields to moderate pressure
Marygold	108	Cut when blossom end yields to moderate pressure
Tenerife	106	Cut when blossom end yields to moderate pressure
GALIA		
Crete	108	Force slip when blossom end yields under moderate pressure
Galia	104	Force slip when rind color half changes from green to gold
M1022	100	Force slip when blossom end yields under moderate pressure
CHARENTAIS		
Acor	99	Cut when rind color half-changes from gray-green to buff
Alienor	108	Cut when rind color half-changes from gray-green to buff
Charmel	102	Cut when rind color half-changes from gray-green to buff
Savor	100	Cut when rind color half-changes from gray-green to buff
CRENSHAW		
Early Crenshaw	100	Force slip when blossom end yields to moderate pressure
CHRISTMAS		
St. Nick	117	Cut when blossom end yields to moderate pressure
WATERMELON		
Ssupersweet	116	Cut when tendril next to vine attachment dies, hollow sound
Sugar Baby	104	Cut when tendril next to vine attachment dies, hollow sound

first female flowers form (usually 3-4 weeks after transplanting) to allow pollination by bees. The earliest flowers that formed beneath the row covers were male.

Weed control. Weeds were controlled by herbicide applications between the plastic mulch strips following transplanting but before row covers were put in place. Care should be taken to prevent the spray from coming in contact with the transplants. Once the row covers were removed, the vines rapidly carpeted the soil and discouraged further weed germination and growth.

Insect and disease control. Specialty melon vines and fruit were highly susceptible to disease (powdery mildew, anthracnose, and phytophthora) and infestations of insects (aphids, cucumber beetles, and vine borers). Insecticides may be applied at night when honey bees are not active. Transplants should be free of aphids before the row covers are laid. Several small severe aphid infestations were observed under the row covers in 1995. Cucumber beetles and vine borers, observed in July, were controlled by biweekly applications of insecticides until they declined.

For disease control, fungicides were applied every 7-10 days in late-June through mid-August to minimize infection.

Harvest. Mature fruit should be harvested for roadside sales. Days to maturity (Table 6) were calculated from the

transplanting date to the date of first significant harvest. The average maturity of all melon cultivars was 105 days. This is about 22 days longer than the average maturity reported in seed catalogues and seed packets (83 days). The lengthened maturity reflected the response of the plants to cooler northern temperatures compared to warmer southern temperatures.

At maturity, each type of specialty melon has its unique characteristics that signal its ripeness (Table 6). When ripe, fruit of honeydews, galias, and crenshaws will sever from the stem with moderate pressure called force slip or half slip. In comparison, ripe muskmelons develop an abscission layer and the fruit will easily part from the stem with light pressure (full slip). The stems of canary, charentais, and Christmas melons are cut when the fruit is ripe. In these types of melons, ripeness is judged when the blossom end yields to moderate pressure and/or changes occur in the color of the rind. For example, all charentais cultivars reach full ripeness when the color of the rind half-changes from gray-green to buff. The stems of charentais will slip only when they are overripe. Overripe fruit will readily split when subjected to rapid changes in soil moisture following rains.

Ripeness of watermelons can be judged by withering of the tendril adjacent to the stem attachment to the vine. The ground patch (uncolored area where the fruit lies on the ground) also changes from white to yellow. With experience, ripeness can also be detected if the sound of a rapped fruit has a hollow tone rather than a high pitched tone when immature.

If specialty melons are to be shipped long distances, they are normally picked before they reach full ripeness. Honeydews may have to be treated with ethylene to ripen (Yamaguchi, 1983).

Specialty melons will remain fresh for 14-21 days if stored at 50-55F with relative humidity at 90-95% (Anon. 1995). Most melons are sensitive to extreme heat and cold.

REFERENCES

Bravo-Ureta, B.E., Fueglein, H.V., and Ashley, R.A. 1985. Enterprise budgets for vegetable crops. Cooperative Extension Service, Univ. of Connecticut, Storrs, CT., 85-23, 48p.

Splittstoesser, W.E. Vegetable growing handbook. AVI Publishing Company, Westport, Connecticut. 298p.

Stephens, G.R., Fleming, J.G., Gacoin, L.T., and Bravo-Ureta, B.E. 1988. Better nutrition in Connecticut: opportunities for expanding fresh produce production and consumption. The Conn. Agr. Exp. Sta., New Haven. Bull 852. 29p.

Wells, O.J. and Loy, J.B. 1985. Intensive vegetable production with row covers. HortScience 20:822-826.

Yamaguchi, M. 1983. World vegetables: principles, production, and nutritive value. AVI Publishing Company, Westport, Connecticut. 415p.

The Connecticut Agricultural Experiment Station, founded in 1875, is the first experiment station in America. It is chartered by the General Assembly to make scientific inquiries and experiments regarding plants and their pests, insects, soil and water, and to perform analyses for State agencies. The laboratories of the Station are in New Haven and Windsor; its Lockwood Farm is in Hamden. Single copies of bulletins are available free upon request to Publications; Box 1106; New Haven, Connecticut 06504. ISSN 0097-0905